http://www.epa.gov//safewater/contaminants/basicinformation/nitrate.html
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Drinking Water Contaminants



# Basic Information about Nitrate in Drinking Water

EPA regulates nitrate in drinking water to protect public health. Nitrate may cause health problems if present in public or private water supplies in amounts greater than the drinking water standard set by EPA.



**What is nitrate?**
Nitrates and nitrites are nitrogen-oxygen chemical units which combine with various organic and inorganic compounds.

**Uses for nitrate.**
The greatest use of nitrates is as a fertilizer. Once taken into the body, nitrates are converted to nitrites.

If you are concerned about nitrate in a private well, please visit:

- EPA's private drinking water wells Web site
- Water Systems Council Web site EXIT Disclaimer

**What are nitrate's health effects?**
Infants below six months who drink water containing nitrate in excess of the maximum contaminant level (MCL) could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

This health effects language is not intended to catalog all possible health effects for nitrate. Rather, it is intended to inform consumers of some of the possible health effects associated with nitrate in drinking water when the rule was finalized.

**Nitrate at a Glance**

**Maximum Contaminant Level (MCL)** = 10 milligrams per Liter (mg/L) or 10 parts per million (ppm)

**Maximum Contaminant Level Goal (MCLG)** = 10 mg/L or 10 ppm

**Health Effects**
Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill, and if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Drinking Water Health Advisories provide more information on health effects

**Chemical Abstract Service Registry Number**
14797-55-8

**Sources of Contamination**
Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

List of all Regulated

**How is nitrate regulated?**
In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of contaminants in drinking water which do or may cause health problems. These non-enforceable health goals, based solely on possible health risks and exposure over a lifetime, are called maximum contaminant level goals (MCLG). Contaminants are any physical, chemical, biological or radiological substances or matter in water.

Contaminants (PDF) (6 pp, 396K, About PDF)

The MCLG for nitrate is 10 mg/L or 10 ppm. EPA has set this level of protection based on the best available science to prevent potential health problems.

**What are EPA's drinking water regulations for nitrate?**
EPA has set an enforceable regulation for nitrate, called a maximum contaminant level (MCL), at 10 mg/L or 10 ppm. MCLs are set as close to the health goals as possible, considering cost, benefits and the ability of public water systems to detect and remove contaminants using suitable treatment technologies. In this case, the MCL equals the MCLG, because analytical methods or treatment technology do not pose any limitation.

The Phase II Rule , the regulation for nitrate, became effective in 1992. The Safe Drinking Water Act requires EPA to periodically review the national primary drinking water regulation for each contaminant and revise the regulation, if appropriate. EPA reviewed nitrate as part of the Six Year Review and determined that the 10 mg/L or 10 ppm MCLG and 10 mg/L or 10 ppm MCL for nitrate are still protective of human health.

- More information on the Six Year Review of Drinking Water Standards.

States may set more stringent drinking water MCLGs and MCLs for nitrate than EPA.

**How does nitrate get into my drinking water?**
The major sources of nitrates in drinking water are runoff from fertilizer use; leaching from septic tanks, sewage; and erosion of natural deposits.

A federal law called the Emergency Planning and Community Right to Know Act (EPCRA) requires facilities in certain industries, which manufacture, process, or use significant amounts of toxic chemicals, to report annually on their releases of these chemicals. For more information on the uses and releases of chemicals in your state, contact the Community Right-to-Know Hotline: (800) 424-9346.

- EPA's Toxics Release Inventory (TRI) Web site provides information about the types and amounts of toxic chemicals that are released each year to the air, water, and land.

**How will I know if nitrate is in my drinking water?**
When routine monitoring indicates that nitrate levels are above the MCL, your water supplier must take steps to reduce the amount of nitrate so that it is below that level. Water suppliers must notify their customers as soon as practical, but no later than 24 hours after the system learns of the violation. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

- See EPA's public notification requirements for public water systems.

If your water comes from a household well, check with your health department or local water systems that use ground water for information on contaminants of concern in

your area.

- For more information on wells, go to EPA's Web site on private wells.

**How will nitrate be removed from my drinking water?**
The following treatment method(s) have proven to be effective for removing nitrate to below 10 mg/L or 10 ppm: ion exchange, reverse osmosis, electrodialysis.

**How do I learn more about my drinking water?**
EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect the supply of safe drinking water and upgrade the community water system. Your water bill or telephone book's government listings are a good starting point for local information.

Contact your water utility. EPA requires all community water systems to prepare and deliver an annual consumer confidence report (CCR) (sometimes called a water quality report) for their customers by July 1 of each year. If your water provider is not a community water system, or if you have a private water supply, request a copy from a nearby community water system.

The CCR summarizes information regarding sources used (i.e., rivers, lakes, reservoirs, or aquifers), any detected contaminants, compliance and educational information.

Some water suppliers have posted their annual reports on EPA's Web site.

**Other EPA Web sites**

- Find an answer or ask a question about drinking water contaminants on EPA's Question and Answer Web site or call EPA's Safe Drinking Water Hotline at (800) 426-4791
- EPA Integrated Risk Information System